ETCR033H High Voltage Clamp Current Sensor

User Manual

Thanks for your purchase of ETCR033H High Voltage Clamp Current Sensor of our company. For better use of the product, please make sure:

---to read this user manual in details.

---to abide by the safety regulations and precautions strictly.

- **u** Under any circumstance, it shall pay special attention on safety in use of this sensor.
- **u** Pay attention to words and symbols stick on the panel.
- **u** If the voltage of tested circuitry has exceeded 600V, it must be used by connecting with an insulation rod.
- **u** As it is very dangerous of high voltage transmission line, the operator must get strict training and the relevant certification on high-pressure operation of the state before using this meter and making a field test.
- **u** Keep the pliers clean, maintenance regularly. Stop using the sensor when there is a rupture or break.
- **u** Please don't keep or store the sensor in the spot with high-temperature and moisture, or condensation, and under direct daylight radiation for a long time.
- **u** This sensor is only to be used, disassembled, and repaired by qualified personnel with authorization.
- **u** When it may cause hazard by continuous use for the reason of the sensor itself, it shall immediately stop using it and deposit it at once, leaving it for disposal by authorized agency.
- **u** For risk of danger icon in manual "⚠", users must perform safety operations strictly in compliance with the manual content.

I. Introduction

ETCR033H High Voltage Clamp Current Sensor break through the traditional structure, specially designed for online measurement of high / low voltage current, leakage current, high order harmonic current, variable ratio, phase, power energy, power, power factor. Adopt the latest CT and shielding technology. It is portable, clamp design, no need to disconnect the measured circuits, non-contact, safe and fast, ensures high-precision, high-reliability and high stability for year-round uninterrupted testing.

The innovation integrated design of pliers and boot sector, with automatic switching structure. Keep the wire be in the center of clamp, push the sensor to clamp the measured wire, while pull the sensor to withdraw the measured wire. The sensor can use together with insulation rods for high voltage testing up to 110KV, such as zinc oxide lighting arrester meter, high voltage clamp current meter, high voltage current transformation tester. It can also be connected with phase detection analyzer, industrial control equipment, data recorder, oscilloscope, harmonic analyzer, electric power quality analyzer, high precision digital multi-meter, etc. It is widely applied in electricity, communication, meteorology, railway, oilfield, construction, measurement, scientific and research teaching unit, industrial and mining enterprises.

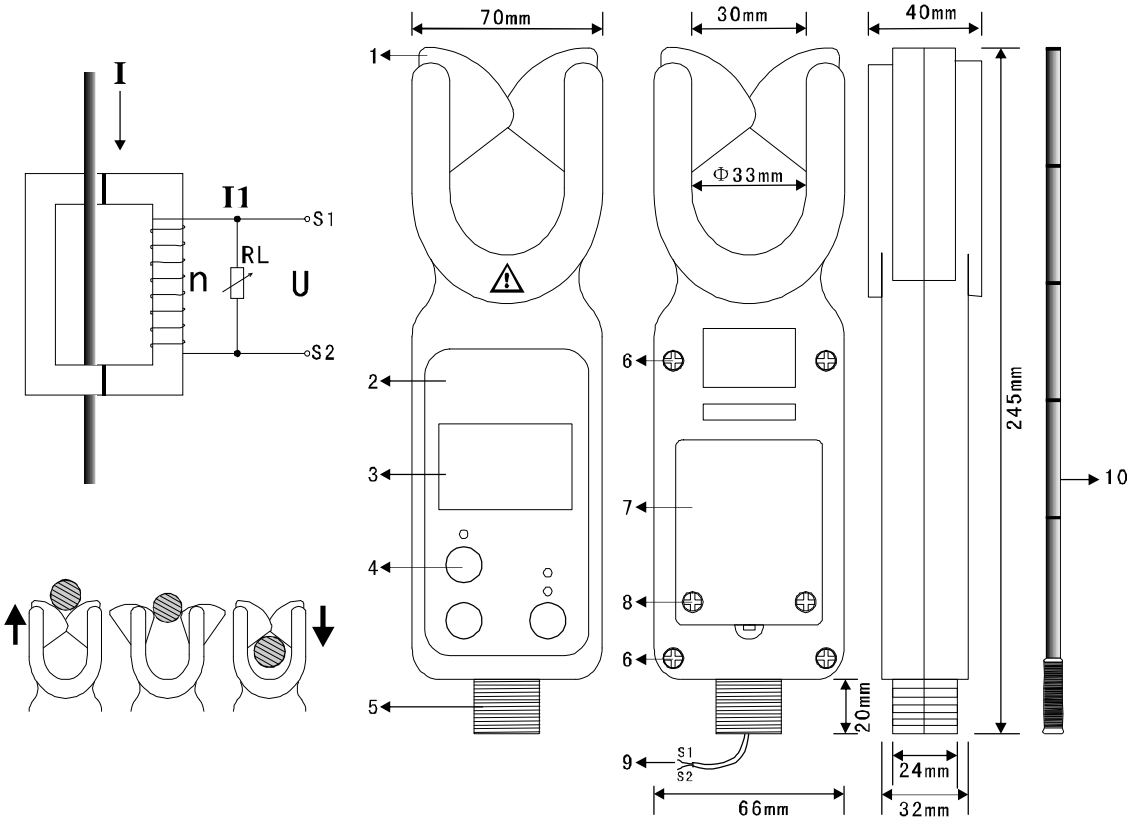
II. Technical Specifications

Function	Measurement of high / low voltage current, leakage current, high order harmonic current, variable ratio, phase, power energy, power, power factor.
Battery Container	Can accommodate 4 pieces alkaline dry battery (1.5V AAA), supply power for further-development.
Clamp Mode	Clamp CT
Output Mode	Current induction, coil tap output (S1, S2)
Clamp Size	Diameter 33mm
Range	0-600A AC
Resolution	0.01mA AC
Accuracy	±1.0%FS (50Hz/60Hz; 23℃±2℃, below 70%RH, keep the wire be in the center of clamp)

Coils Turn	1:4000
Phase Error	≤3°(50Hz/60Hz; 23℃±2℃)
Reference Load	RL: 0-1A≤500Ω; 0-10A≤50Ω; 0-100A≤5Ω; 0-1000A≤0.5Ω
Output Wire	Length of 10cm, can connect it after open the cover.
Electric Field Interference	About 10mA when the external electric field 100A, 10mm nearby
Measured Wire Position	Keep the wire be in the center of clamp
Current Frequency	45Hz-60Hz(measured current frequency)
Frequency Characteristics	10Hz-100kHz
Circuit Voltage	High voltage testing up to 110KV (operate with insulation rods)
Dimension	245mm×70mm×40mm
Weight	210g
Working Environment	-20℃-50℃; below 80%rh
Storage Environment	-10℃-60℃; below 70%rh
Structure	Anti-dripping II
Insulation Strength	AC 3700V/rms (between core and shell)
Safety Rules	IEC1010-1, IEC1010-2-032, Pollution degree 2, CAT Ⅲ(600V)

Ⅲ. Principle and Structure

The sensor induced output a current **I1**, the current **I1** generate voltage **U** on the external sampling load resistance **RL**, so the measured current **I** can be calculated by measuring **I1** or **U**. Among them, **I=n×I1**; **U=I1×RL**. **n** is the coils turn (current ratio).



1. Clamp (including boot sector)
2. Paster area for further-development
3. Display window for further-development
4. Used for button or indicator
5. Insulation rod connector
6. Cover connection screw
7. Battery cover
8. Battery cover fixed screw
9. Output wire (hidden inside the box)
10. Insulation rods 5m (optional)

⚠	**Clamp live wire or null line separately to measure the current of this line. (Note: single wire)**
	Clamp live wire and null line together to measure leakage current of single phase. (Note: 2 wires)
	Clamp earth wire to measure grounding line leakage current of electrical equipment. (Note: single wire)
	Clamp three wires together to measure the leakage current of three phase three wires.（Note: 3 wires）
	Clamp four wires together to measure the leakage current of three phase four wires.（Note: 4 wires）

⚠ ***Manufactured by***

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